



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re patent application of

Toshikazu KAWAI et al.

Serial Number: 09/381,372

Art Unit: 1621

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Examiner: R. Keys

For: PROCESS FOR PURIFYING FLUOROMETHYL 1,1,1,3,3,3-
HEXAFLUOROISOPROPYL ETHER

DECLARATION UNDER 37 C.F.R. 1.132

Honorable Commissioner for
Patents
Alexandria, Virginia 22313-1450

Sir:

I, Matsue KAWAMURA, declare that I am a citizen of Japan
residing at Kawagoe City, Japan;

That I am one of the inventors of the above-identified
application;

That the following experiments were conducted according
to my instructions and under my supervision and that the results
of the experiments were as stated below.

EXPERIMENT A

Into a 300 ml flask provided with a reflux condenser and
a stirrer, 100 g of a fluoromethyl
1,1,1,3,3,3-hexafluoroisopropyl ether containing 0.20 % by
weight of 1,1,1,3,3,3-hexafluoroisopropyl alcohol was added
to form a mixture. 57.1 g of a 0.1 wt% aqueous solution of sodium

hydroxide was added to the mixture. Then, the mixture was stirred for 3 hours while being kept at 35°C. The equivalent ratio of sodium hydroxide to 1,1,1,3,3,3-hexafluoroisopropyl alcohol was 1.2 in the mixture. Thereafter, stirring was stopped in which two layers were formed in the mixture in the flask. A part of the lower layer was sampled and subjected to a gas chromatographic analysis to analyze the organic matter in the lower layer. As a result of the analysis, it was confirmed that the lower layer contained 1,1,1,3,3,3-hexafluoroisopropyl alcohol in an amount smaller than a detection limit (1 ppm). At this time, no new substance was found in a gas chromatogram obtained by the analysis.

EXPERIMENT B

Into a 300 ml flask provided with a reflux condenser and a stirrer, 100 g of a fluoromethyl 1,1,1,3,3,3-hexafluoroisopropyl ether containing 0.162 % by weight of 1,1,1,3,3,3-hexafluoroisopropyl alcohol was added to form a mixture. 38.6g of a 0.1 wt% aqueous solution of sodium hydroxide was added to the mixture. Then, the mixture was stirred for 3 hours while being kept at 35°C. The equivalent ratio of sodium hydroxide to 1,1,1,3,3,3-hexafluoroisopropyl alcohol was 1.0 in the mixture. Thereafter, stirring was stopped in which two layers were formed in the mixture in the flask. A part of the lower layer was sampled and subjected to a gas chromatographic analysis to analyze the organic matter in the lower layer. As a result of the analysis, it was confirmed that the lower layer contained 1,1,1,3,3,3-hexafluoroisopropyl alcohol in an amount smaller than a detection limit (1 ppm).

At this time, no new substance was found in a gas chromatogram obtained by the analysis.

EXPERIMENT C

Into a 300 ml flask provided with a reflux condenser and a stirrer, 100 g of a fluoromethyl 1,1,1,3,3,3-hexafluoroisopropyl ether containing 0.100 % by weight of 1,1,1,3,3,3-hexafluoroisopropyl alcohol was added to form a mixture. 23.8 g of a 0.1 wt% aqueous solution of sodium hydroxide was added to the mixture. Then, the mixture was stirred for 3 hours while being kept at 35°C. The equivalent ratio of sodium hydroxide to 1,1,1,3,3,3-hexafluoroisopropyl alcohol was 1.0 in the mixture. Thereafter, stirring was stopped in which two layers were formed in the mixture in the flask. A part of the lower layer was sampled and subjected to a gas chromatographic analysis to analyze the organic matter in the lower layer. As a result of the analysis, it was confirmed that the lower layer contained 1,1,1,3,3,3-hexafluoroisopropyl alcohol in an amount smaller than a detection limit (1 ppm). At this time, no new substance was found in a gas chromatogram obtained by the analysis.

I further declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may

jeopardize the validity of the above-captioned application or
any patent issuing thereon.

01/12/2007
Date:

Matsue Kawamura
Matsue KAWAMURA